

Kramer Electronics, Ltd.



USER MANUAL

Models:

SL-14RC, *Master Controller*

RC-3TB, *Remote Control Panel (Optional)*

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1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront the video, audio, presentation, and broadcasting professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 1,000-plus different models now appear in 11 groups¹ that are clearly defined by function.

Thank you for purchasing the Kramer **SL-14RC Master Controller**, which is ideal for controlling multimedia rooms, such as classrooms, auditoriums, conference rooms, and so on, while enabling remote control and management of the AV equipment.

Each package includes the following items:

- The **SL-14RC Master Controller**
- Kramer **RC-SV** Configuration software
- This user manual²

Optional component:

- **RC-3TB Remote Control Panel**

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high-performance high-resolution cables³

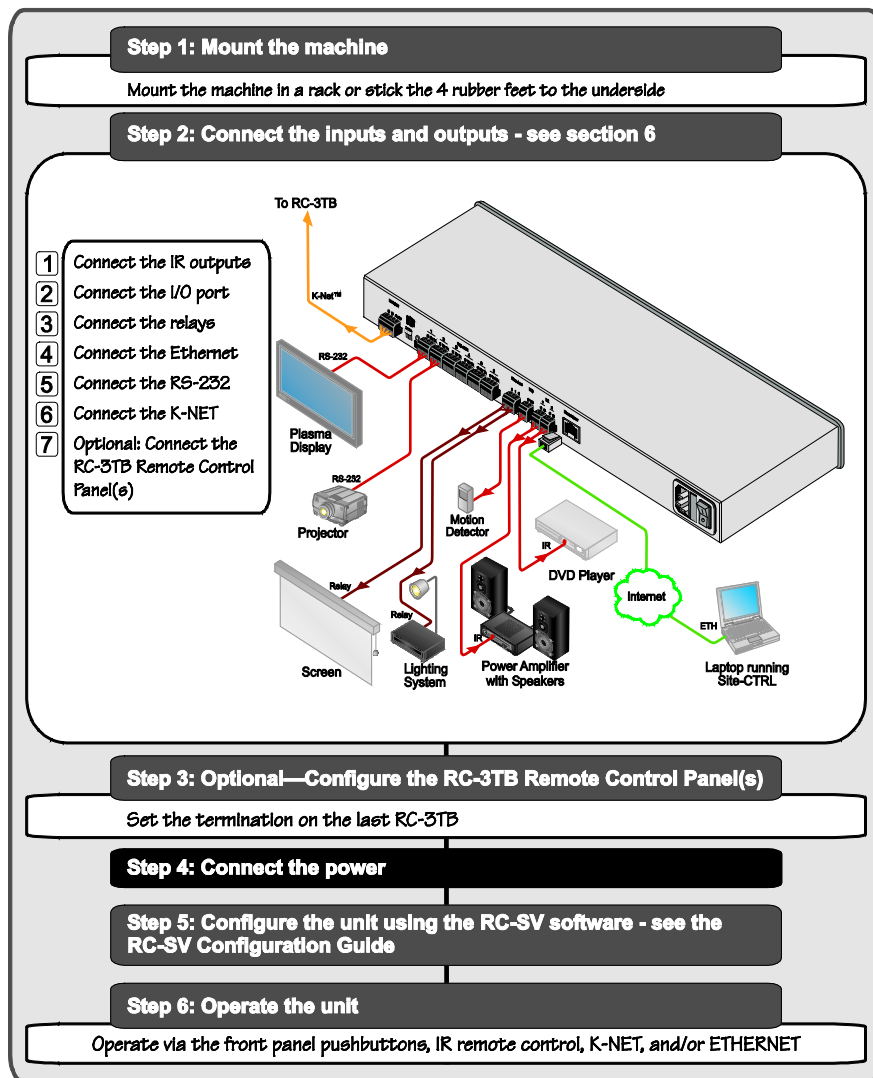
1 GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Matrix Switchers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters; GROUP 11: Sierra Products

2 Download up-to-date Kramer user manuals from our Web site at <http://www.kramerelectronics.com>

3 The complete list of Kramer cables is on our Web site at <http://www.kramerelectronics.com>

2.1 Quick Start

The following quick start chart summarizes the basic setup and operation steps.



3 Overview

The **SL-14RC** is a highly versatile master room controller that acts as an all-in-one extended remote control panel for control of A/V equipment—especially projectors and associated equipment—in any room (such as classrooms, boardrooms, or auditoriums). It streamlines operations and simplifies control by integrating audio, video, and computer-video sources into a centralized system. Optional 3-button remote control panels are available which enable you to remotely duplicate the functionality of front panel pushbuttons.

The **SL-14RC Master Controller** features:

- 12 configurable front panel pushbuttons (configured using the **RC-SV** software¹)
- 1 configurable rotary up/down controller with direction indicator LEDs (configured using the **RC-SV** software)
- 1 general purpose I/O port that can be configured as an analog input, digital input, or digital output for interfacing with a variety of devices such as sensors, switches, LEDs, and relays
- 6 bi-directional RS-232 ports that can control AV equipment such as projectors, LCD and PDP displays, power amplifiers, switchers and scalars
- 2 relay contacts that can control other room items related to the AV system, such as, raising and lowering drapes, screen or projector
- IR control on 2 outputs (terminal blocks)
- IR Learning that learns commands from any IR remote
- Compatibility with Kramer **Site-CTRL** software for network remote control and management over the Ethernet port
- A **K-Net™** control channel that connects compatible user interfaces and supplies power and control data over a single cable
- Flexible control via Ethernet and **K-Net™**

To achieve the best performance:

- Use only good quality connection cables¹
- Position your Kramer **SL-14RC** away from moisture, excessive sunlight and dust

¹ Available from Kramer Electronics on our Web site at <http://www.kramerelectronics.com>

4 Defining the SL-14RC Master Controller

[Figure 1](#) and [Table 1](#) define the front panel of the **SL-14RC**.

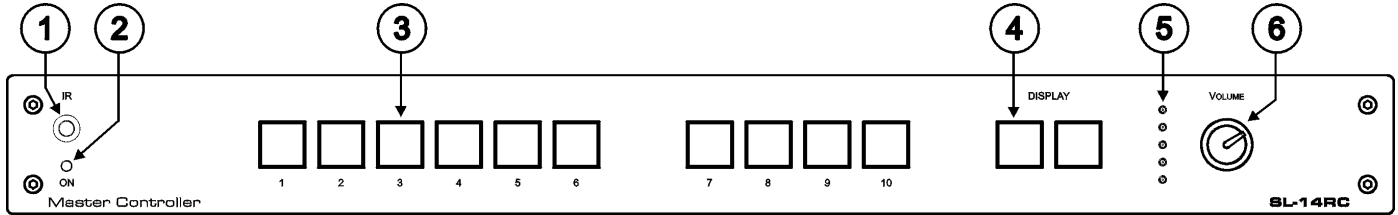


Figure 1: SL-14RC Master Controller Front Panel

Table 1: SL-14RC Master Controller Front Panel Functions

#	Feature	Function
1	IR Receiver	Accepts IR control
2	ON LED	Lights when the SL-14RC is switched on
3	Configurable Pushbutton Switches 1-10	Function is programmed by the RC-SV software
4	DISPLAY Configurable Pushbutton Switches 11 and 12	Function is programmed by the RC-SV software
5	Rotary Switch Up/Down LED Indicator	Indicates the amplitude of the rotary switch setting
6	VOLUME Rotary Switch	Function is programmed by the RC-SV software

[Figure 2](#) and [Table 2](#) define the rear panel of the **SL-14RC**.

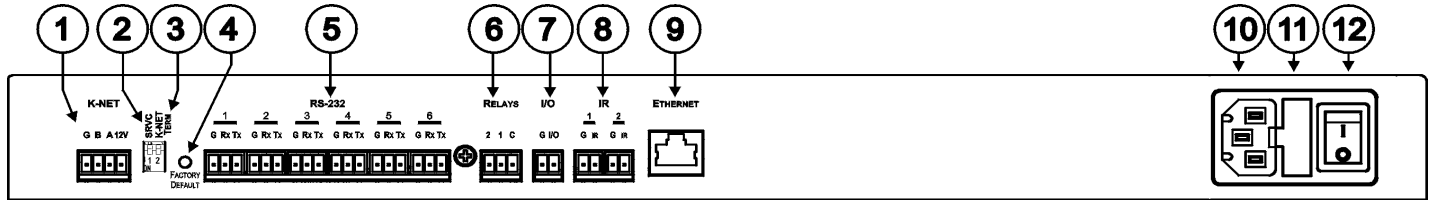


Figure 2: SL-14RC Master Controller Rear Panel

Table 2: SL-14RC Master Controller Rear Panel Functions

#	Feature	Function
1	K-NET ¹ Connector	PIN GND is for the Ground connection ² ; PIN B (-) and PIN A (+) are for RS-485, and PIN +12V is for powering the unit
2	SRVC Switch	For service use only
3	K-NET TERM Switch	Slides down for K-Net termination, slides up for not terminated
4	FACTORY DEFAULT Pushbutton ³	Press to reset to factory default definitions (see Section 8)
5	RS-232 Terminal Blocks	Connect to the RS-232 devices (from 1 to 6)
6	RELAYS Terminal Blocks	Connect to low-voltage relay-driven devices (from 1 to 2)
7	I/O Terminal Block	Connect to various analog and digital sensors
8	IR Output Terminal Blocks	Connect to IR emitter cables (from 1 to 2)
9	ETHERNET RJ-45 Connector	Connects to the PC or other serial controller through computer LAN
10	Mains Power Receptacle	Connects to mains power
11	Mains Power Fuse	Fuse holder for overload protection
12	Power On/Off Switch	Illuminated switch for turning the unit ON and OFF

¹ K-Net™ is a proprietary Kramer protocol for interconnecting Kramer units

² The ground connection is sometimes connected to the shield of the RS-485 cable (in most applications, it is not connected)

³ First switch off the unit and then switch it on while pressing the DEFAULT button. The unit powers up and loads its memory with the factory default definitions and erases all stored presets

5 Defining the RC-3TB Remote Control Panel (Optional)

[Figure 3](#) and [Table 3](#) define the **RC-3TB**.

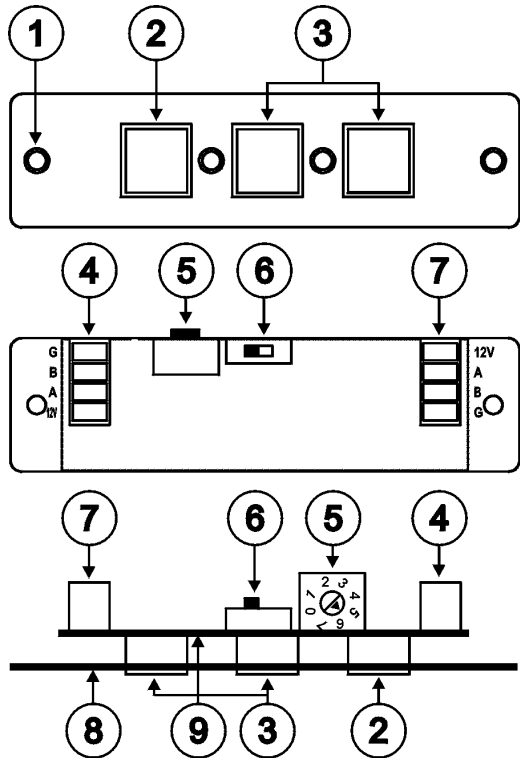


Figure 3: RC-3TB Remote Control Panel Components

Table 3: RC-3TB Remote Control Panel Functions

#	Feature	Function
1	Mounting Hole	2 holes for mounting the RC-3TB to the PTBUS-3 or TBUS-6W
2	Pushbutton 1	Function is always assigned to pushbutton 12 on SL-14RC
3	Pushbuttons 2 and 3	Function is assigned by the rotary switch position (see Table 4)
4	K-Net Connector	Connects to either SL-14RC or additional RC-3TB
5	8 Position Rotary Switch	For assigning which pushbuttons on the SL-14RC are emulated by the pushbuttons on the RC-3TB (see Table 4)
6	K-Net Termination Switch	Terminates the K-NET to RC-3TB daisy-chain
7	K-Net Connector	Connects to either SL-14RC or additional RC-3TB
8	Front Panel	For mounting the RC-3TB
9	Printed Circuit Board	Contains the components of the RC-3TB

Pushbutton 1 is always assigned to the second DISPLAY pushbutton (pushbutton number 12) on the **SL-14RC**. The position of the rotary switch

(see [Table 4](#)) determines which of the 12 pushbuttons on the **SL-14RC** are emulated by pushbuttons 2 and 3 on the **RC-3TB**.

Table 4: RC-3TB Rotary Switch Pushbutton Assignment

Rotary Switch Position	Button 1	Button 2	Button 3
0	12	7	8
1	12	7	9
2	12	7	10
3	12	8	9
4	12	8	10
5	12	9	10
6	12	7	9
7	Service use only		

For example, if the rotary switch is in position 4, the 3 pushbuttons on the **RC-3TB** will duplicate the functions of pushbuttons 12, 8, and 10 on the **SL-14RC**. That is, in this example, pressing button 1 on the **RC-3TB** has the same effect as pressing pushbutton 12 on the **SL-14RC**, pressing button 2 on the **RC-3TB** has the same effect as pressing pushbutton 8 on the **SL-14RC**, and pressing button 3 on the **RC-3TB** has the same effect as pressing pushbutton 10 on the **SL-14RC**.

Note: The rotary switch configuration is only read at switch on. Therefore, when changing the rotary switch position, you must switch off the **SL-14RC** and then switch it on again for the new settings to take effect.

For details of how to connect the **RC-3TB**, see [Section 6.3](#).

6 Connecting the SL-14RC Master Controller

To connect¹ the **SL-14RC** as shown in the example in [Figure 4](#):

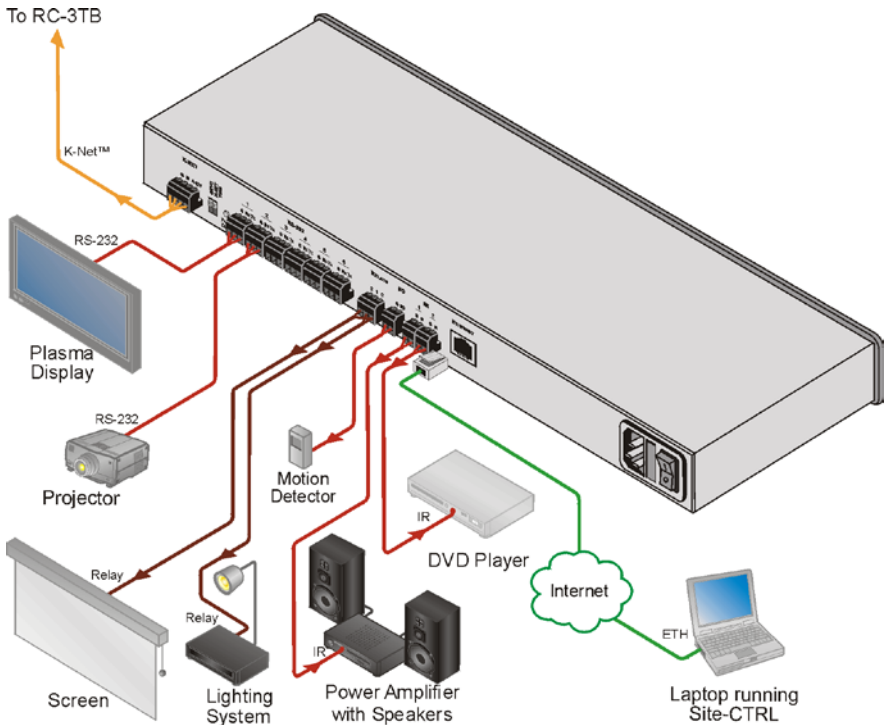


Figure 4: Connecting the SL-14RC Master Controller

1. Connect the RELAY terminal block connectors as follows:
 - Connect RELAY 1 to the lighting system
 - Connect RELAY 2 to the screen
2. Connect the I/O port to a motion detector.
3. Connect the IR outputs as follows:
 - Connect an IR emitter to IR OUTPUT 1 and attach the emitter to the DVD player
 - Connect an IR emitter to IR OUTPUT 2 and attach the emitter to the power amplifier
4. Connect the RS-232 ports (see [Section 6.3](#)) as follows:

¹ Switch off the power on each device before connecting it to your SL-14RC. After connecting your SL-14RC, switch on its power and then switch on the power to each device

- Connect RS-232 port 1 to the projector
 - Connect RS-232 port 3 to the plasma display
5. Connect the Ethernet port to a network.
 6. Connect the K-Net port to the input of the first **RC-3TB Remote Control Panel** (see [Section 6.3](#)).
 7. Connect the output of the first **RC-3TB Remote Control Panel** to the input of the second **RC-3TB Remote Control Panel** (see [Section 6.3.1](#)).

6.1 Connecting the RS-232 Interface

To connect an AV device to the **SL-14RC** using the RS-232 port, connect the RS-232 9-pin D-sub port on your AV device to the RS-232 terminal block on the rear panel of the **SL-14RC** as shown in [Figure 5](#).

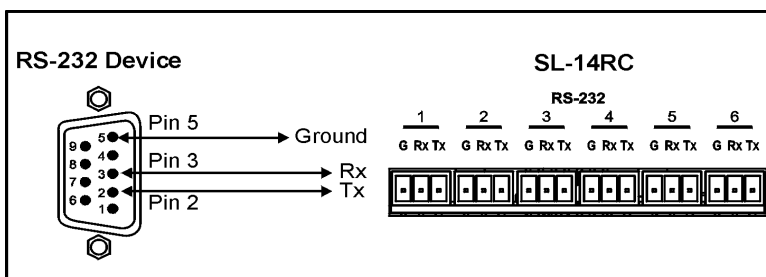


Figure 5: RS-232 Connection

6.2 Connecting the Ethernet Port

The Ethernet connection of the **SL-14RC** lets you perform all control functions of the **SL-14RC** over the Internet using a PC running the Kramer Site-CTRL control program.

To connect the **SL-14RC** to a network:

1. Connect the Ethernet port of the **SL-14RC** to the Ethernet port on a network hub or network router, via a straight cable with RJ-45 connectors.
2. At the other end, connect the Internet to a PC running Site-CTRL.

After connecting the Ethernet port, you have to install and configure it. For detailed instructions on how to install and configure your Ethernet port, see the *RC-SV Configuration Guide* available from our Web site¹.

6.3 Connecting RC-3TB Remote Control Panels (Optional)

One or more **RC-3TB** panels may be connected to the **K-Net** port on the **SL-14RC** in a daisy-chain configuration.

¹ At <http://www.kramerelectronics.com>

The wiring from a K-Net port to a single **RC-3TB** is shown in [Figure 6](#).

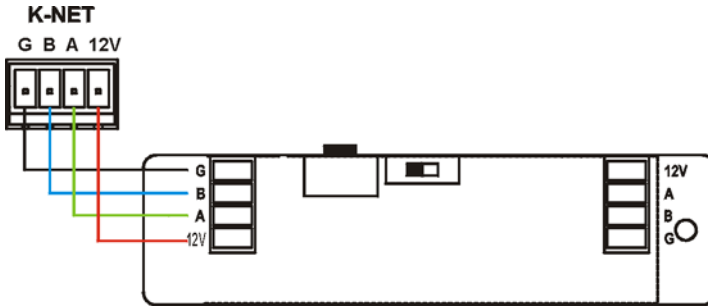


Figure 6: K-Net to RC-3TB Connection

6.3.1 Terminating RC-3TB Remote Control Panels

If only one **RC-3TB** is connected, it must be terminated and the termination on the **SL-14RC** is turned off (see [Section 6.3.1](#)). When viewed from above and the rotary switch is to the left of the termination switch, slide the termination switch to the left as shown in [Figure 6](#).

Only the last **RC-3TB** in the chain should be terminated.

6.3.2 Daisy-chaining Multiple RC-3TB Remote Control Panels

The wiring of two **RC-3TB** panels to the K-NET port on the **SL-14RC** is shown in [Figure 6](#). Connection of more than two **RC-3TB** panels follows the same principle.

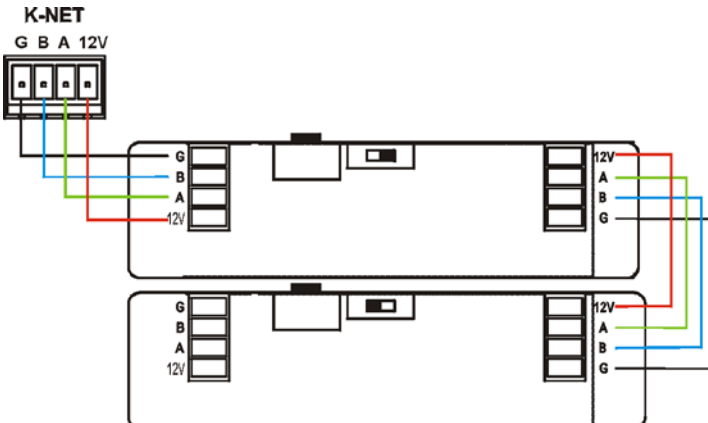


Figure 7: Daisy-chaining Multiple RC-3TB Panels

Note the position of the termination switch on the first **RC-3TB** (open, to the right), and that of the second **RC-3TB** (closed, to the left).

Connections to an **SL-14RC** or to another **RC-3TB** can be made to either connector block as the connector blocks have identical functionality.

7 Operating the SL-14RC Master Controller

You can operate your **SL-14RC** using:

- Front panel pushbuttons. These are configured using the **RC-SV** configuration software. For instructions on using the software, see the *RC-SV Configuration Guide* available from our Web site¹
- **RC-3TB** Remote Control Panels (optional)
- A PC running **Site-CTRL** control software:
To operate your device using **Site-CTRL**, see the *Site-CTRL User Guide* available at the Kramer Web site²

8 Technical Specifications

The **SL-14RC** technical specifications are shown in [Table 5](#).

Table 5: SL-14RC Master Controller Technical Specifications³

INPUTS:	K-Net and 6 RS-232 on terminal block connectors; Ethernet on an RJ-45 connector; 1 infrared
OUTPUTS:	2 relays (36V AC or DC, 2A, 60VAC maximum on non-inductive load), 1 GPI/O, and 2 IR ports on terminal block connectors
DEFAULT IP SETTINGS:	IP number – 192.168.1.39 Mask – 255.255.0.0 Gateway – 0.0.0.0
POWER SOURCE:	100-240 VAC, 50/60 Hz, 22VA
DIMENSIONS:	48.26cm x 11.5cm x 1U (19" x 4.5" x 1U) W, D, H
WEIGHT:	0.6kg (1.4lbs) approx.
OPTIONS:	RC-3TB Remote Control Panel, IR emitter cables

The **RC-3TB** technical specifications are shown in [Table 6](#).

Table 6: RC-3TB Remote Control Panel Technical Specifications³

DIMENSIONS:	8.9cm x 2.1cm x 2.3cm (3.5" x 0.8" x 0.9") W, D, H
WEIGHT:	0.1kg (22oz) approx.

¹ www.kramerelectronics.com

² Available in the near future

³ Specifications are subject to change without notice

LIMITED WARRANTY

Kramer Electronics (hereafter *Kramer*) warrants this product free from defects in material and workmanship under the following terms.

HOW LONG IS THE WARRANTY

Labor and parts are warranted for seven years from the date of the first customer purchase.

WHO IS PROTECTED?

Only the first purchase customer may enforce this warranty.

WHAT IS COVERED AND WHAT IS NOT COVERED

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Kramer, or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the Web site www.kramerelectronics.com.
2. Any product, on which the serial number has been defaced, modified or removed, or on which the WARRANTY VOID IF TAMPERED sticker has been torn, reattached, removed or otherwise interfered with.
3. Damage, deterioration or malfunction resulting from:
 - i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
 - ii) Product modification, or failure to follow instructions supplied with the product
 - iii) Repair or attempted repair by anyone not authorized by Kramer
 - iv) Any shipment of the product (claims must be presented to the carrier)
 - v) Removal or installation of the product
 - vi) Any other cause, which does not relate to a product defect
 - vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.
3. Shipping charges.

HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on your product, you must take or ship it prepaid to any authorized Kramer service center.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).
3. For the name of the nearest Kramer authorized service center, consult your authorized dealer.

LIMITATION OF IMPLIED WARRANTIES

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

EXCLUSION OF DAMAGES

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or:
2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.

NOTE: All products returned to Kramer for service must have prior approval. This may be obtained from your dealer.

This equipment has been tested to determine compliance with the requirements of:

- | | |
|-----------|---|
| EN-50081: | "Electromagnetic compatibility (EMC);
generic emission standard.
Part 1: Residential, commercial and light industry" |
| EN-50082: | "Electromagnetic compatibility (EMC) generic immunity standard.
Part 1: Residential, commercial and light industry environment". |
| CFR-47: | FCC* Rules and Regulations:
Part 15: "Radio frequency devices
Subpart B. Unintentional radiators" |

CAUTION!

- ☒ Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.

- ☒ Use the supplied DC power supply to feed power to the machine.

- ☒ Please use recommended interconnection cables to connect the machine to other components.

* FCC and CE approved using STP cable (for twisted pair products)



For the latest information on our products and a list of Kramer distributors, visit our Web site www.kramerelectronics.com where updates to this user manual may be found.
We welcome your questions, comments, and feedback.



Caution

Safety Warning:

Disconnect the unit from the power supply before opening/servicing.

